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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/656,968	09/05/2003	Daniel P. Carter	884.467US2	1652
21186	7590	04/21/2006	EXAMINER	
SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A. P.O. BOX 2938 MINNEAPOLIS, MN 55402			OMGBA, ESSAMA	
			ART UNIT	PAPER NUMBER
			3726	

DATE MAILED: 04/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/656,968

Applicant(s)

CARTER ET AL

Examiner

Essama Omgba

Art Unit

3726

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,5,8-15,19,22 and 26 is/are rejected.
- 7) ☒ Claim(s) 2-4,6,7,16-18,20,21,23-25,27 and 28 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 1/25/06
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

2. Claims 1, 8, 11-15 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Applicant's Admitted Prior Art (AAPA).

Applicant, at pages 2, 3 and 6-9 of the specification to be known as AAPA, discloses a method of making a heat sink wherein a plurality of fins are formed from a quantity of thermally conductive material, the fins extending outwardly from a core in an asymmetric pattern, the core having a central axis, each fin having a base coupled to the core substantially parallel to the central axis, each fin further having a tip, wherein a face has a periphery defined by the fin tips and wherein the face comprises inter-fin openings (fig. 2), the core including a central cavity with a copper plug inserted in the cavity. Applicant should note that the recitation "wherein the face is to face a heat-generating electrical component" is an intended use recitation and as such has not been given any patentable weight. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In this case the heat sink of AAPA is capable of being used in the manner intended by Applicant.

Applicant should also note that is known to form fins on a heat sink by extrusion as admitted by Applicant on page 7, this inherently requires a die.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 5, 19 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA in view of Mira (US Patent 5,661,638).

AAPA discloses a method of making a heat sink as shown above except for bending a portion of each fin in substantially the same direction. However Mira discloses fins (22) that have portions that are straight (the portions of the fins 22 that terminate at the corners of heat sink 20 in figure 5) and portions that are bent in substantially the same relative direction (figure 3). The bending of the fins is advantageous in that it effectively increases the surface area of each fin, thereby increasing the amount of heat dissipation. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have bent the fins of the heat sink of AAPA in light of the teachings of Mira, in order to increase heat transfer efficiency.

5. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA.

AAPA discloses a method of making a heat sink as shown above. Although AAPA does not disclose the specific aspect ratios and dimensions claimed, however it would have been obvious to one of ordinary skill in the art at the time the invention was made that the specific aspect ratios and dimensions are merely a design choice and it would have been obvious to one of ordinary skill in the art to adjust the ratios to achieve the desired cooling effect for a given application.

Allowable Subject Matter

6. Claims 2-4, 6, 7, 16-18, 20, 21, 23-25, 27 and 28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter: the above listed claims are found allowable in view of Applicant's submitted declaration under 37 CFR § 1.131 of Ben M. Broili and Mike S. Brazel, which swear behind the Liang reference, declaration dated February 18, 2003 and was filed with Applicant's "Amendment & Response Under 35 C.F.R. § 1.111" in U.S. Serial No. 09/950,100 (parent application of the instant application).

Response to Arguments

8. Applicant's arguments with respect to claims 1, 5, 8-15, 19, 22 and 26 have been considered but are moot in view of the new ground(s) of rejection.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Essama Omgba whose telephone number is (571) 272-4532. The examiner can normally be reached on M-F 9-6:30, 1st Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, George Nguyen can be reached on (571) 272-4491. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Essama Omgba
Primary Examiner
Art Unit 3726